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# Mineral Industry Surveys

**For information, contact:**
Jozef Plachy, Zinc Commodity Specialist
U.S. Geological Survey
989 National Center
Reston, VA 20192
Telephone: (703) 648-4982, Fax: (703) 648-7757
E-mail: jplachy@usgs.gov

Samir Hakim (Data)
Telephone: (703) 648-4998
Fax: (703) 648-7975
E-mail: shakim@usgs.gov

**Internet:** http://minerals.usgs.gov/minerals

## ZINC IN JANUARY 2005

Domestic mine production of zinc in January of 53,100 metric tons (t) was 10% less than that in December and about 12% less than in January 2004, according to the U.S. Geological Survey. Estimated smelter production of 24,600 t was about 22% more than in December but was about 9% less than in January 2004. Apparent consumption of 88,700 t was about 10% less than in both December 2004 and January 2004.

The Platts Metals Week average monthly composite price for North American Special High Grade zinc increased to 61.54 cents per pound in January. The price was 5% (about 3 cents per pound) higher than in December 2004 and was the highest monthly level in about 4 years.

Insufficient zinc concentrate supplies, higher metal prices, and lower smelter treatment charges caused revenues for mining companies to double since 2001. During the same period, smelters' revenues have increased by only 25% to 30%, while the zinc prices have increased by about 65%. The small increase in smelters' revenues was mainly caused by the fall in treatment charges, reflecting a widening gap between feed requirements by smelters and mine output. Since 2001, concentrate production has lagged behind the growth of smelter capacities, first in western countries (opening of Townsville in Australia and expansions in Mexico, Republic of Korea, and Spain), then continuing in the former Eastern Bloc, and especially in China. Because of this imbalance, smelter utilization in China in 2004 declined to only 78% (CRU Monitor, 2005§[1]). Development of the Duddar deposit in Pakistan, financed by a consortium of Chinese companies, was expected to help secure feed for Chinese smelters in a tight concentrate market. The project, 200 kilometers north of Karachi, was designed to have a capacity of 660,000 t/yr of ore producing about 100,000 t/yr zinc concentrate and 32,600 t/yr lead concentrate. Construction was to begin in April 2005, and production was to start by yearend 2007 (Platts Metals Week, 2005a).

Despite prevailing inadequate concentrate supplies, Huludao Nonferrous Metals Co. Ltd. of China was to restart 80,000 t/yr of capacity of the 130,000 t/yr of capacity that was closed in 2001 amid low prices, provided the company can obtain enough raw material. In August 2004, 50,000 t of this capacity was bought back on line, and with the zinc price reaching a 7-year high, the company confirmed plans to reopen the remaining capacity by May 2005. Output for 2005 was expected to total 320,000 t, nearly a 9% increase over 2004 production by Huludao (Metal-Pages, 2005b§).

Other Chinese zinc producers, mostly located in the southern part of the country, were closing down production lines or putting expansions on hold mainly because of power shortages. One of the leading companies forced to curtail production at its Hunan Province plant was Zhuzhou Smelter Group Co. Ltd. The company is likely to resume production of its 100,000-t/yr line in April when the rainy season usually begins, feeding the hydroelectric power plants in the region. Shaanxi Zinc Industry's Shangluo zinc smelter has shelved plans to upgrade its zinc ingot operations in 2005 owing to power and concentrate shortages. The project, when completed, would increase capacity by 66% to 50,000 t/yr. Another southern Chinese producer, Liuzhou Nonferrous Co., will also keep its zinc output 50% below capacity in 2005 (Platts Metals Week, 2005b).

Korea Zinc Co. Ltd. secured future raw material supply by purchasing a 7.5% interest in Australia's Kagara Zinc Ltd. for $11.8 million. Most of the funding was to be used to expedite development of a second zinc treatment facility at Kagara's Mt. Garnet Mine and to accelerate development of the Mungana and Red Dome base metal and gold deposits near Chillagoe in Queensland. Kagara supplies the South Korean company with 100,000 t/yr of contained zinc in concentrate, which was expected to double (Metal-Pages, 2005c§). Korea Zinc also agreed to take a 10.4% interest in Perilya Ltd. of Australia as a repayment for a $15 million loan received in 2002. Korea Zinc would also provide Perilya with a new $15.7 million line of credit in exchange for the right to acquire all the lead/zinc concentrate produced at the Broken Hill zinc-lead mine in New South Wales, eastern Australia (Metal-Pages, 2005a§).

[1]References that include a section mark (§) are found in the Internet References Cited section.

## Update

The potential closure of Porto Vesme ISP (imperial smelting process) smelter in Sardinia, Italy, and the Cartagena smelter in Spain may not affect zinc supply in any significant way. Although zinc prices are increasing, owing to a supply deficit, the concentrate freed by closure of 155,000 t/yr of capacity was expected to be absorbed by other, underutilized smelters. However, because of the diminishing number of ISP smelters, Glencore International AG of Switzerland may encounter some difficulty finding close-by buyers for its lead-zinc bulk concentrate and may have to ship it to Eastern Europe, where many ISP smelters still operate. If Española del Zinc S.A., owing to bankruptcy proceedings, also was forced to curtail or completely stop production at its Spanish smelter, the freed concentrate could be processed by many underutilized European refineries without affecting overall zinc metal production (Platts Metals Week, 2005c).

## References Cited


Platts Metals Week, 2005a, Chinese to develop Pakistani zinc mine: Platts Metals Week, v. 76, no. 2, January 10, p. 13.

Platts Metals Week, 2005b, LME zinc spikes on news of Zhuzhou smelter line closure: Platts Metals Week, v. 76, no. 4, January 24, p. 1, 5.

Platts Metals Week, 2005c, Porto Vesme furnace to close; Espanola de Zinc bankrupt: Platts Metals Week, v. 76, no. 6, February 7, p. 1, 11.


## Internet References Cited


CRU Monitor, 2005, Zinc concentrate—one man's boom is another man's bust, accessed March 3, 2005, via URL http://www.crumonitor.com.

Metal-Pages, 2005a (February 17), Korea Zinc agrees to take stake in Perilya, accessed February 17, 2005, via URL http://www.metal-pages.com.

Metal-Pages, 2005b (March 2), Restart for Zn major after 4 years, accessed March 2, 2005, via URL http://www.metal-pages.com.

Metal-Pages, 2005c (January 25), Zn major seals supply, accessed January 25, 2005, via URL http://www.metal-pages.com.

TABLE 1
SALIENT ZINC STATISTICS[1]

(Metric tons, unless otherwise specified)

| | 2004 | | | 2005 |
|---|---|---|---|---|
| | January-December | November | December | January |
| Production: | | | | |
| Mine, zinc content of concentrate | 738,000 | 59,300 | 59,000 r | 53,100 |
| Mine, recoverable zinc | 712,000 | 56,800 | 56,500 r | 51,000 |
| Smelter, refined zinc | 320,000 | 23,500 e | 20,200 e | 24,600 e |
| Consumption: | | | | |
| Refined zinc, reported | 421,000 | 34,300 | 33,400 | 33,500 |
| Ores[e] (zinc content) | 727 | 61 | 61 | 61 |
| Zinc-base scrap[e] (zinc content) | 191,000 | 15,900 | 15,900 | 15,900 |
| Copper-base scrap[e] (zinc content) | 176,000 | 14,700 | 14,700 | 14,700 |
| Aluminum-and magnesium-base scrap[e] (zinc content) | 1,430 | 120 | 120 | 120 |
| Total[e] | 790,000 | 65,000 | 64,100 | 64,200 |
| Apparent consumption, metal[2] | 1,160,000 | 96,400 | 98,200 | 88,700 [3] |
| Stocks of refined (slab) zinc, end of period: | | | | |
| Producer[4] | XX | 6,780 | 6,430 | 9,860 |
| Consumer[5] | XX | 54,300 | 56,300 | 57,200 |
| Merchant | XX | 10,600 | 10,200 | 10,200 |
| Total | XX | 71,600 | 73,000 | 77,300 |
| Shipments of zinc metal from Government stockpile | 28,900 | -- | -- | -- |
| Imports for consumption: | | | | |
| Refined (slab) zinc | 812,000 | 80,800 | 62,700 | NA |
| Oxide (gross weight) | 103,000 | 9,420 | 6,910 | NA |
| Ore and concentrate (zinc content) | 231,000 | 8,460 | 29,600 | NA |
| Exports: | | | | |
| Refined (slab) zinc | 3,300 | 155 | 96 | NA |
| Oxide (gross weight) | 14,400 | 960 | 1,600 | NA |
| Ore and concentrate (zinc content) | 745,000 | 5,140 | 33,300 | NA |
| Waste and scrap (gross weight) | 53,900 | 5,500 | 4,020 | NA |
| Price: | | | | |
| London Metal Exchange, average, dollars per metric ton | $1,050.00 | $1,100.00 | $1,180.00 | $1,250.00 |
| Platts Metals Week North American Special High Grade, average, cents per pound | 52.47 | 54.81 | 58.53 | 61.54 |

[e]Estimated. [r]Revised. NA Not available. XX Not applicable. -- Zero.

[1]Data are rounded to no more than three significant digits; except prices; may not add to totals shown.

[2]Smelter production plus imports minus exports plus shipments from Government stockpile plus stock change.

[3]Data based on reported consumption, stocks, and estimated trade data.

[4]Data from U.S. Geological Survey and American Bureau of Metal Statistics.

[5]Includes an estimate for companies that report annually.

TABLE 2
REFINED ZINC PRODUCED IN THE UNITED STATES[1]

(Metric tons)

| Month | Beginning stocks[2] | Production | Shipments | Ending stocks[2] |
|---|---|---|---|---|
| 2004: | | | | |
| January | 7,660 | 26,900 | 28,100 | 6,440 |
| February | 6,440 | 26,900 | 28,100 | 5,230 |
| March | 5,230 | 28,900 | 28,200 | 5,960 |
| April | 5,960 e | 29,600 | 28,300 | 7,300 |
| May | 7,300 e | 28,600 | 28,300 | 7,660 |
| June | 7,660 e | 28,600 e | 29,900 | 6,340 |
| July | 6,340 e | 29,200 e | 29,200 | 6,390 |
| August | 6,390 e | 29,300 e | 29,300 | 6,370 |
| September | 6,370 e | 24,100 e | 23,400 | 7,020 |
| October | 7,020 e | 23,800 e | 23,700 | 7,070 |
| November | 7,070 e | 23,500 e | 23,800 | 6,780 |
| December | 6,780 e | 20,200 e | 20,500 | 6,430 |
| January-December | XX | 320,000 | 321,000 | XX |
| 2005: | | | | |
| January | 6,430 e | 24,600 e | 21,200 | 9,860 |

eEstimated. XX Not applicable.
[1]Data are rounded to no more than three significant digits; may not add to totals shown.
[2]Includes stocks held at locations other than smelters.

Sources: U.S. Geological Survey and American Bureau of Metal Statistics.

TABLE 3
APPARENT CONSUMPTION OF REFINED ZINC
ACCORDING TO INDUSTRY USE AND PRODUCT[1]

(Metric tons)

| | 2004 | | | |
|---|---|---|---|---|
| Industry and product | January-December[2] | November | December | 2005 January[2] |
| Galvanizing: | | | | |
| Sheet and strip | 477,000 | 39,800 | 40,500 | 36,400 |
| Other | 167,000 | 13,800 | 14,400 | 12,300 |
| Total | 644,000 | 53,600 | 54,900 | 48,700 |
| Brass and bronze | 188,000 | 15,300 | 15,200 | 14,200 |
| Zinc-base alloy | 244,000 | 20,300 | 20,900 | 19,000 |
| Other uses[3] | 85,800 | 7,200 | 7,300 | 6,900 |
| Grand total | 1,160,000 | 96,400 | 98,200 | 88,700 |

[1]Data are rounded to no more than three significant digits; may not add to totals shown.
[2]Data based on reported consumption, stocks, and estimated trade data.
[3]Includes zinc used in making zinc dust, desilvering lead, powder, alloys, anodes, chemicals, castings, light metal alloys, rolled zinc, and miscellaneous uses not elsewhere specified.

TABLE 4
AVERAGE MONTHLY ZINC PRICES[1]

| Period | North American ¢/lb. | LME[2] cash ¢/lb. | LME[2] cash $/t |
|---|---|---|---|
| 2004: | | | |
| January | 49.93 | 46.11 | 1,016.62 |
| February | 53.84 | 49.32 | 1,087.26 |
| March | 55.25 | 50.14 | 1,105.37 |
| April | 52.09 | 46.82 | 1,032.28 |
| May | 51.76 | 46.63 | 1,027.93 |
| June | 51.33 | 46.32 | 1,021.08 |
| July | 50.08 | 44.81 | 987.94 |
| August | 49.44 | 44.24 | 975.39 |
| September | 49.23 | 44.22 | 974.83 |
| October | 53.31 | 48.28 | 1,064.49 |
| November | 54.81 | 49.68 | 1,095.18 |
| December | 58.53 | 53.52 | 1,179.83 |
| January-December | 52.47 | 47.51 | 1,047.35 |
| 2005: | | | |
| January | 61.54 | 56.51 | 1,245.81 |

[1]Special High Grade.
[2]London Metal Exchange.

Source: Platts Metals Week.

TABLE 5
U.S. EXPORTS OF ZINC[1]

| Material | 2003 Quantity (metric tons) | 2003 Value (thousands) | 2004[2] December Quantity (metric tons) | 2004[2] December Value (thousands) | 2004[2] Year to date Quantity (metric tons) | 2004[2] Year to date Value (thousands) |
|---|---|---|---|---|---|---|
| Refined (slab) zinc | 1,680 | $1,760 | 96 | $113 | 3,300 | $5,330 |
| Ore and concentrate (zinc content) | 841,000 | 337,000 | 33,300 | 9,700 | 745,000 | 413,000 |
| Waste and scrap (gross weight) | 50,200 | 32,600 | 4,020 | 4,190 | 53,900 | 48,300 |
| Powders, flakes, dust (zinc content) | 6,550 | 9,090 | 666 | 1,230 | 7,640 | 13,500 |
| Oxide (gross weight) | 12,100 | 15,200 | 1,600 | 2,060 | 14,400 | 19,800 |
| Chloride (gross weight) | 1,470 | 1,650 | 152 | 150 | 1,870 | 2,200 |
| Sulfate (gross weight) | 2,310 | 1,440 | 369 | 234 | 3,060 | 1,860 |
| Compounds, other (gross weight) | 183 | 472 | 7 | 53 | 194 | 711 |

[1]Data are rounded to no more than three significant digits.
[2]Data for January 2005 were not available at time of publication.

Source: U.S. Census Bureau.

TABLE 6
U.S. IMPORTS FOR CONSUMPTION OF ZINC[1]

| Material | 2003 | | 2004[2] | | | |
|---|---|---|---|---|---|---|
| | | | December | | Year to date | |
| | Quantity (metric tons) | Value (thousands) | Quantity (metric tons) | Value (thousands) | Quantity (metric tons) | Value (thousands) |
| Refined (slab) zinc | 758,000 | $647,000 | 62,700 | $67,300 | 812,000 | $888,000 |
| Ore and concentrate (zinc content) | 164,000 | 60,000 | 29,600 | 18,300 | 231,000 | 98,700 |
| Waste and scrap (gross weight) | 10,300 | 5,740 | 1,050 | 854 | 10,800 | 7,740 |
| Powders, flakes, dust (zinc content) | 27,400 | 41,200 | 1,490 | 2,270 | 24,800 | 40,200 |
| Oxide (gross weight) | 98,300 | 72,200 | 6,910 | 6,310 | 103,000 | 89,000 |
| Chloride (gross weight) | 663 | 914 | 24 | 56 | 705 | 863 |
| Sulfate (gross weight) | 25,800 | 11,700 | 2,010 | 1,100 | 29,100 | 14,000 |
| Compounds, other (gross weight) | 1,010 | 951 | 825 | 657 | 4,660 | 4,230 |

[1]Data are rounded to no more than three significant digits.
[2]Data for January 2005 were not available at time of publication.

Source: U.S. Census Bureau.

TABLE 7
SHIPMENTS OF ZINC METAL FROM THE NATIONAL DEFENSE STOCKPILE[1]

(Metric tons)

| Period | Beginning inventory | Shipments | Ending inventory |
|---|---|---|---|
| 2004: | | | |
| January | 95,200 | 3,340 | 91,900 |
| February | 91,900 | -- | 91,900 |
| March | 91,900 | 2,920 | 89,000 |
| April | 89,000 | 3,340 | 85,600 |
| May | 85,600 | 14,700 | 70,900 |
| June | 70,900 | 1,170 | 69,800 |
| July | 69,800 | 44 | 69,700 |
| August | 69,700 | 3,360 | 66,400 |
| September | 66,400 | -- | 66,400 |
| October | 66,400 | -- | 66,400 |
| November | 66,400 | -- | 66,400 |
| December | 66,400 | -- | 66,400 |
| January-December | XX | 28,900 | XX |
| 2005: | | | |
| January | 66,400 | -- | 66,400 |

XX Not applicable. -- Zero.
[1]Data are rounded to no more than three significant digits; may not add to totals shown.

Source: Defense Logistics Agency.

TABLE 8
U.S. IMPORTS OF ZINC, BY TYPE OF MATERIAL AND COUNTRY[1,2]

(Metric tons)

| Material and country | General imports | | | Imports for consumption | | |
|---|---|---|---|---|---|---|
| | | 2004 | | | 2004 | |
| | 2003 | December | Year to date | 2003 | December | Year to date |
| Ore and concentrate (zinc content): | | | | | | |
| Australia | 43,400 | 8,630 | 27,900 | 43,400 | 8,630 | 27,900 |
| Ireland | 36,500 | 3,240 | 17,700 | 36,500 | 3,240 | 17,700 |
| Mexico | 9,400 | 183 | 6,530 | 9,400 | 183 | 6,530 |
| Peru | 74,600 | 17,500 | 178,000 | 74,600 | 17,500 | 178,000 |
| Other | -- | -- | 877 | -- | -- | 877 |
| Total | 164,000 | 29,600 | 231,000 | 164,000 | 29,600 | 231,000 |
| Blocks, pigs, or slab: | | | | | | |
| Australia | 22,000 | -- | 7,940 | 14,400 | 25 | 27,500 |
| Brazil | 27,600 | -- | 26,400 | 22,400 | -- | 26,400 |
| Canada | 498,000 | 46,500 | 501,000 | 498,000 | 46,500 | 501,000 |
| China | 23,800 | -- | 35 | 48 | 4,240 | 16,500 |
| Japan | 50 | -- | -- | -- | -- | 690 |
| Kazakhstan | 19,700 | -- | 2,310 | 19,700 | -- | 2,310 |
| Korea, Republic of | 34,000 | -- | 8,030 | 1,340 | -- | 31,900 |
| Mexico | 141,000 | 12,000 | 123,000 | 141,000 | 12,000 | 123,000 |
| Namibia | 16,100 | -- | 47,900 | 16,100 | -- | 47,900 |
| Peru | 43,400 | -- | 25,600 | 42,900 | -- | 30,500 |
| Poland | 1,600 | -- | -- | 1,600 | -- | -- |
| Other | 1,050 | -- | 204 | 121 | -- | 3,970 |
| Total | 829,000 | 58,500 | 743,000 | 758,000 | 62,700 | 812,000 |
| Dross, ashes, fume (zinc content) | 14,100 | 1,360 | 16,100 | 14,100 | 1,360 | 16,100 |
| Grand total | 1,010,000 | 89,400 | 990,000 | 936,000 | 93,700 | 1,060,000 |
| Oxide (gross weight): | | | | | | |
| Canada | 47,300 | 3,320 | 49,700 | 47,300 | 3,320 | 49,700 |
| China | 575 | -- | 207 | 575 | -- | 207 |
| Italy | 770 | 1,160 | 13,400 | 770 | 1,160 | 13,400 |
| Japan | 965 | 48 | 1,060 | 965 | 48 | 1,060 |
| Mexico | 40,500 | 1,930 | 33,200 | 40,500 | 1,930 | 33,200 |
| Netherlands | 4,820 | 345 | 4,700 | 4,820 | 345 | 4,700 |
| Other | 3,420 | 119 | 796 | 3,420 | 119 | 796 |
| Total | 98,300 | 6,910 | 103,000 | 98,300 | 6,910 | 103,000 |
| Other (gross weight): | | | | | | |
| Waste and scrap | 10,300 | 1,050 | 10,800 | 10,300 | 1,050 | 10,800 |
| Sheets | 1,790 | 47 | 2,500 | 1,790 | 47 | 2,500 |
| Powders, flakes, dust (zinc content) | 27,500 | 1,490 | 24,800 | 27,400 | 1,490 | 24,800 |

-- Zero.

[1]Data are rounded to no more than three significant digits; may not add to totals shown.

[2]Data for January 2005 were not available at time of publication.

Source: U.S. Census Bureau.